

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte JOHN E. WILSON and CHRISTOPHER BULL

---

Appeal No. 1997-1520  
Application 08/365,464<sup>1</sup>

---

ON BRIEF

---

Before KIMLIN, ELLIS and KRATZ, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-14, all the claims remaining in the present application. Claim 1 is illustrative:

---

<sup>1</sup> Application for patent filed December 28, 1994.

1. A substrate selected from the group consisting of a nonwoven material and a woven material, said substrate comprising a binder and a light-activated anionic or cationic dye capable of generating singlet oxygen in the present [sic] of oxygen and upon exposure to light as an antimicrobial or antiviral agent, said anionic or cationic dye being bound to said substrate by said binder in an amount effective for rendering said substrate antimicrobial or antiviral upon exposure of said substrate to light.

In the rejection of the appealed claims, the examiner relies upon the following references:

Stephenson	3,987,797	Oct. 26, 1976
Crawford et al. (Crawford)	4,009,313	Feb. 22, 1977
Ohlson et al. (Ohlson)	4,421,826	Dec. 20, 1983
Ito et al. (Ito)	5,281,662	Jan. 25, 1994 (Filed Aug. 30, 1972)

Appellants' claimed invention is directed to a nonwoven or woven substrate material that comprises a binder and a dye, such as Methylene Blue, that is capable of generating singlet oxygen in the presence of oxygen and upon exposure to light as an antimicrobial or antiviral agent. The substrate material is used to make fabrics suitable for hospital gowns, diapers, surgical drapes, etc.

Appealed claims 1, 2, 6, 8, 9, 12 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Stephenson. Claims 1, 2, 5-9 and 12-14 stand rejected under

35 U.S.C. § 103 as being unpatentable over Stephenson in view of Ito. Also, claims 3 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson in view of Ito and Ohlson. In addition, claims 4 and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson in view of Ito and Crawford.

Appellants submit at pages 4 and 5 of the brief that all the appealed claims stand or fall together with respect to each separate prior art rejection.

We have thoroughly reviewed each of appellants' arguments for patentability. However, with the exception of the examiner's rejection of claims 4 and 11 under § 103, we find no error in the examiner's rejections.

Accordingly, with the noted exception, we will sustain the examiner's rejections for essentially those reasons expressed in the answer, and we add the following primarily for emphasis.

We consider first the examiner's rejection of claims 1, 2, 6, 8, 9, 12 and 13 under § 102 over Stephenson.<sup>2</sup>

We fully concur with the examiner that Stephenson discloses a substrate material which has a dye, Methylene Blue, bound to the substrate by a binder, i.e., an

---

<sup>2</sup> Since all the claims rejected under § 102 stand or fall together, we will limit our discussion to claim 1.

ionically bonded block elastomeric copolymer of a polyquaternary polyurethane and a polyanionic polymer such as heparin. Stephenson exemplifies the use of Methylene Blue at column 12, line 13. Although Stephenson utilizes Methylene Blue for the disclosed purpose of coloring the substrate, and not for imparting antimicrobial or antiviral activity upon the substrate, the examiner has correctly pointed out that the discovery of a new property or use of a previously known material cannot impart patentability to claims to the known material. In re Schoenwald 964 F.2d 1122, 1124, 22 USPQ2d 1671, 1673 (Fed. Cir. 1992), In re Spada 911 F.2d. 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). Also, contrary to appellants' argument, based on the disclosure of Ito and, apparently, appellants' acknowledgement of the state of the art at page 2 of the present specification, Methylene Blue was known in the art to have antibacterial characteristics.

Appellants submit at page 14 of the brief that "**Stephenson** does not disclose an anionic or cationic dye **bound** to the suture (i.e., the substrate) by a **binder** in the sense that term is used in the instant claims." (emphasis in original.) However, Stephenson expressly discloses that "[t]he attachment of the antimicrobial or dye group to the heparin elastomer is represented in the formula with a dotted line because the

true mechanism of bonding is not known." (column 5, lines 15-18, emphasis added). As explained by the examiner, appellants have not refuted this expressed teaching of Stephenson with compelling reasoning or objective evidence which establishes an actual difference between the manner in which the dye is "bound" to the substrate in the appealed claims and the manner of attachment or bonding disclosed by Stephenson.

Appellants also point to the disclosure of Stephenson that the substrate is useful for "slowly releasing selected antimicrobial compounds" (column 2, lines 10 and 11).

However, this disclosure makes references only to the antimicrobial compounds, not the dyes, and, furthermore, the slow release described is clearly a matter of degree inasmuch as, as noted by the examiner, Stephenson also discloses that "[t]he antimicrobial treated suture is resistant to leaching and retains its antimicrobial properties in the presence of water or tissue fluid for a significant period of time to inhibit bacterial growth in and around the suture." (column 1, lines 53-57). Also, appellants have presented no evidence on this record that the Methylene Blue of the present invention is bound to the substrate to a greater extent than the Methylene Blue of Stephenson.

We will also sustain the examiner's rejection of claims 1, 2, 5-9 and 12-14 under § 103 over Stephenson in view of Ito for essentially the reasons set forth above. As

noted above, Ito specifically discloses that Methylene Blue has antibacterial characteristics (column 3, lines 55 and 56). Hence, we agree with the examiner that one of ordinary skill in the art would have been motivated to use an effective amount of Methylene Blue to serve as both an antibiotic and a colorant in the application of Stephenson. While appellant contends that the disclosures of Stephenson and Ito are not combinable because they teach different base materials, the examiner has correctly pointed out that both Stephenson and Ito disclose polyester as a base material.

We will also sustain the examiner's rejection of claims 3 and 10 under § 103 over Stephenson in view of Ito and Ohlson. Claim 3 recites that the binder is a blocked waterborne polyurethane prepolymer, and Ohlson discloses the use of a waterborne polyurethane polymer for treating woven or non-woven textile materials to enhance coloring of the materials by dyes, including dispersed dyes. Since Methylene Blue is a dispersed dye (see Ito at column 3, lines 48-56), we agree with the examiner that it would have been obvious for one of ordinary skill in the art to replace the polyurethane copolymer of Stephenson with the waterborne polyurethane of Ohlson with the reasonable expectation of facilitating dyeing the substrate material with increased color flexibility in a one-step process (see examiner's answer at page 5, paragraph 5.)

We cannot sustain the rejection of claims 4 and 11 under § 103 over Stephenson in view of Ito and Crawford. Appealed claims 4 and 11 specify that the binder is carrageenan, and the examiner finds that "Crawford teaches a non-woven composite web which contains carrageenan as a binder . . . for the purpose of providing surgical dressings or other non-woven products" (page 6 of answer, third full paragraph). However, the flaw in the examiner's rejection is that Crawford does not provide any teaching or suggestion that carrageenan can be used to bind a dye to a substrate material. Accordingly, we see no reason why one of ordinary skill in the art would have been motivated to replace the polyurethane copolymer of Stephenson with the carrageenan of Crawford.

In conclusion, based on the foregoing, we will sustain the examiner's § 102 rejection of claims 1, 2, 6, 8, 9, 12 and 13 over Stephenson, the rejection of claims 1, 2, 5-9 and 12-14 under § 103 over Stephenson in view Ito, and the rejection of claims 3 and 10 under § 103 over Stephenson in view of Ito and Ohlson. However, we are constrained to reverse the examiner's rejection of claims 4 and 11 under § 103 over Stephenson in view of Ito and Crawford. Accordingly, the examiner's decision rejecting the appealed claims is affirmed-in-part.

Appeal No. 1997-1520  
Application No. 08/365,464

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

EDWARD C. KIMLIN  
Administrative Patent Judge

JOAN ELLIS  
Administrative Patent Judge

PETER F. KRATZ  
Administrative Patent Judge

)  
)  
)  
)  
) BOARD OF PATENT  
) APPEALS AND  
) INTERFERENCES  
)  
)  
)  
)

vsh



Appeal No. 1997-1520  
Application No. 08/365,464

Elman & Associates  
20 West Third Street  
P.O. Box 1969  
Media, PA 19063